

AMENDMENT AND RESPONSE

Serial Number: 08/902,809

Filing Date: July 30, 1997

Title: SELECTIVE SPACER TO PREVENT METAL OXIDE FORMATION DURING POLYCIDAL REOXIDATION

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3 25. (Amended) The semiconductor device of claim 23, further comprising a layer of [oxide] reoxidation on the spacer and the oxide [active area] layer, the layer of [oxide] reoxidation being formed by a polycide reoxidation and forming a smile effect at the boundary between the feature and the oxide [active area] layer.

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D1 26. (Amended) An electronic device comprising:
a first layer of oxide;
a feature over the first layer of oxide, the feature having a surface;
a boundary between the first layer of oxide and the feature; and
a spacer comprising silicon nitride or an amorphous silicon film only on the surface of the feature.

6 28. (Amended) The electronic device of claim 26 wherein:
the first layer of oxide comprises a layer of gate oxide;
the feature comprises an electrode including polysilicon, a refractory metal, and a dielectric, or undoped silicon;
[the spacer comprises silicon nitride or an amorphous silicon film;] and
the surface of the feature comprises sidewalls of the electrode.

7 29. (Amended) The electronic device of claim 26, further comprising a second layer of oxide on the spacer and the first layer of oxide, the second layer of oxide forming a smile effect at the boundary between the feature and the first layer of oxide.

8 30. (Amended) An electronic device comprising:
a first layer of oxide;
a feature over the first layer of oxide, the feature having a surface;
a boundary between the first layer of oxide and the feature;
a spacer comprising silicon nitride or an amorphous silicon film only on the surface of the feature; and

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a second layer of oxide on the spacer and the first layer of oxide, the second layer of oxide forming a smile effect at the boundary between the feature and the first layer of oxide.

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31. (Amended) The electronic device of claim 30 wherein:

the first layer of oxide comprises a layer of gate oxide;

the feature comprises an electrode including polysilicon, a refractory metal, and a dielectric, or undoped silicon;

the spacer [comprises silicon nitride or an amorphous silicon film and the spacer] is deposited on the surface of the feature extending to and terminating at the boundary; and

the surface of the feature comprises sidewalls of the electrode.

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36. (Amended) An electronic device comprising:

a first layer of oxide;

an electrode on the first layer of oxide, the electrode having sidewalls; and

a spacer comprising silicon nitride or an amorphous silicon film deposited only on the sidewalls of the electrode, the spacer extending to and terminating at a boundary between the first layer of oxide and the sidewalls of the electrode.

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37. (Amended) The electronic device of claim 36 wherein:

the first layer of oxide comprises a layer of gate oxide; and

the electrode comprises polysilicon, a refractory metal, and a dielectric, or undoped silicon; and

the spacer comprises silicon nitride or an amorphous silicon film].

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38. (Amended) The electronic device of claim 36, further comprising a second layer of oxide on the spacer and the first layer of oxide, the second layer of oxide forming a smile effect at the boundary between the first layer of oxide and the sidewalls of the electrode.

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39. (Amended) A semiconductor device, comprising:

a first layer of oxide;

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a feature protruding from the first layer of oxide and having sidewalls, the feature including:

a polysilicon portion;

a portion of conductive material deposited on the polysilicon portion; and

a spacer comprising silicon nitride or an amorphous silicon film selectively deposited only on the sidewalls of the feature; and

a second layer of oxide deposited on the semiconductor device, wherein the spacer is interposed between the second layer of oxide and the sidewalls of the feature.

40. (Amended) The semiconductor device of claim 39, wherein [the spacer comprises silicon nitride or an amorphous silicon film and] the portion of conductive material comprises tungsten silicide.

42. (Amended) A gate electrode, comprising:
one or more layers of conductive materials etched to form a feature having sidewalls exposing the layers;

a selectively deposited spacer comprising silicon nitride or an amorphous silicon film, wherein the spacer is deposited only on the sidewalls of the feature;

a layer of oxide disposed over the gate electrode.

43. (Amended) The gate electrode of claim 42, wherein the layers of conductive materials comprise tungsten silicide [and the selectively deposited spacer comprises silicon nitride or an amorphous silicon film].

Please add the following new claim:

44. (New) An electronic device comprising:

a first layer of oxide;

an electrode on the first layer of oxide, the electrode having sidewalls; and

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